## SEQUENCE LISTING

<110> The Trustees of the University of Pennsylvania Samuel Jotham Reich Enrico Maria Surace Michael J. Tolentino

. .

<120> COMPOSITIONS AND METHODS FOR SIRNA
INHIBITION OF HIF-1 ALPHA

<130> 43826-0002PC1

<150> US 60/423,262
<151> 2002-11-01

<160> 299

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 2964
<212> DNA
<213> Homo sapiens

<400> 1

ggccgtccct ggcggcgag atggcggcga cagcggcgga ggctgtgacc tctggctctg 60 gagageeeeg ggaggagget ggageeeteg geeeegeetg geatgaatee cagttgegea 120 gttatagett ecegaetagg eceatteege gtetgagtea gagegaeece egggeagagg 180 agettattga gaatgaggag cetgtggtge tgaccgacac aaatettgtg tatcetgece 240 tgaaatggga ccttgaatac ctgcaagaga atattggcaa tggagacttc tctgtgtaca 300 gtgccagcac ccacaagttc ttgtactatg atgagaagaa gatggccaat ttccagaact 360 ttaagccgag gtccaacagg gaagaaatga aatttcatga gttcgttgag aaactgcagg 420 atatacagca gcgaggaggg gaagagggt tgtatctgca gcaaacgctc aatgacactg 480 tgggcgggaa gattgtcatg gacttcttag gttttaactg gaactggatt aataagcaac 540 agggaaagcg tggctggggg cagcttacct ctaacctgct gctcattggc atggaaggaa 600 atgtgacacc tgctcactat gatgagcagc agaacttttt tgctcagata aaaggttaca 660 aacgatgcat cttattccct ccggatcagt tcgagtgcct ctacccatac cctgttcatc 720 acccatgtga cagacagagc caggtggact ttgacaatcc cgactacgag aggttcccta 780 atttccaaaa tgtggttggt tacgaaacag tggttggccc tggtgatgtt ctttacatcc 840 caatgtactg gtggcatcac atagagtcat tactaaatgg ggggattacc atcactgtga 900 acttetggta taaggggget eccaeceeta agagaattga atateetete aaageteate 960 agaaagtggc cataatgaga aacattgaga agatgcttgg agaggccttg gggaacccac 1020 aagaggtggg gcccttgttg aacacaatga tcaagggccg gtacaactag cctgccaggg 1080 gtcaaggcct cctgccaggt gactgctatc ccgtccacac cgcttcattg atgaggacag 1140 gagactccaa gcgctagtat tgcacgctgc acttaatgga ctggactctt gccatggccc 1200 aggagtcagg tgtttggagc gaggcagggc agttggcact ccactcctat ttggagggac 1260 ttcataccct tgcctcttgt gccccagcac cttctctctc tgccccccgc ctaaagtcct 1320 gcattcagtg tgtggagtcc cagcttttgg ttgtcatcat gtctgtgtgt atgttagtct 1380 gtcaacttcg gaatgtgtgc gtgtgtgtgc atgcacacgc atgtatgtat ctgttccctg 1440 tteettetgg gteaggetgt caetteegge teteggeect ateteetgea aceteagtge 1500 ctcagcctga gagagagatg agatgctctt ggactcccca ctgcatctgg gctgcagggc 1560 cagagetagt etgaceatta ggteagtetg ecteetgaca gtttttgegt agteaagete 1620

```
taggcggtat gggaatggct accgggactc taatggggtg aaagagaggg gaggcttgcc \overline{16}8\overline{0}
 tttgagagcc tatatagcct tcctgtgaga gaggattaga tagggttcca actgggccta 1740
 caagetcaag ccatacataa aaggacettg ggacataaga accaatgatt gtgcataagt 1800
 tctaaattag agacacatat agtttctctc tttcagcacc agctcttgcc cctatgctgg 1860
 gtaccaaggg agttctccta gctgtggctt ctctaggttc taggggtgca agcctctgtg 1920
 tgtttgtttg tgtgtgtctg tgtgtgcgta tccacactag gggtgcaagc ctctgggtgt 1980
 tggccagcet cectaettae caaggttete caetgettae ettttecagt gggacagtae 2100
agtgtgagcc cccgggaagt actgcctgac ctatcctaag cttttacact tggattttag 2160
ccatcatatg ttggccaggt ttcactgcag cctgcccgag gctaactggc tagagcctcc 2220
aggeeetatg atgeteeetg eccaggeeat atcetttatt ectgetgage tteetggetg 2280
aatagatgaa atggggtcaa gcccaggcag ctcattcact atctgtgatc cacctcaggg 2340
cacgggcaaa cacataggct tgcgtcttaa agccagctcc tctgccagac cccgttgtaa 2400
tgtgccacaa caccctcaat agtcagggca actggtggag catggaagtc gaatttcctt 2460
ttctgttagg agctactcct gggaacccct ctcagggctg cagcttacag gtgggcagct 2520
gtgattgcac aacttgaagg gccatcattc acatctattc agtgggagtg gggtccctgg 2580
gattgggcag tgtggtggcc ctgtgtctcc tcacctctgc tcctgtcttc atcaccttct 2640
ctctggaagg gaagaggagt tggaaggtct ctggttttct tttcttttt ttttttgcc 2700
aaaggtttac ttccagcatc tgagctctgg ctctcacccc tgaagctcag ttatagtgca 2760
ctgatgaact gagaggatgc gtgtggatgt gtgtgcatgc ctgagtgcgt tttttgggga 2820
ggggtgttta tttttagtac cccattctgg ggttctctga tgcagtgtgg atgtgaagat 2880
atggtacett eteaagtgta getettteaa atatagteaa tgetgggaaa aaaaaaaaa 2940
aaaaaaaaa aaaaaaaaa aaaa
<210> 2
<211> 3958
<212> DNA
<213> Homo sapiens
<400> 2
gtgctgcctc gtctgagggg acaggaggat caccctcttc gtcgcttcgg ccagtgtgtc 60
gggctgggcc ctgacaagcc acctgaggag aggctcggag ccgggcccgg accccggcga 120
ttgccgcccg cttctctcta gtctcacgag gggtttcccg cctcgcaccc ccacctctgg 180
acttgccttt ccttctcttc tccgcgtgtg gagggagcca gcgcttaggc cggagcgagc 240
ctgggggccg cccgccgtga agacatcgcg gggaccgatt caccatggag ggcgccggcg 300
gcgcgaacga caagaaaaag ataagttctg aacgtcgaaa agaaaagtct cgagatgcag 360
ccagateteg gegaagtaaa gaatetgaag ttttttatga gettgeteat cagttgecae 420
ttccacataa tgtgagttcg catcttgata aggcctctgt gatgaggctt accatcagct 480
atttgcgtgt gaggaaactt ctggatgctg gtgatttgga tattgaagat gacatgaaag 540
cacagatgaa ttgcttttat ttgaaagcct tggatggttt tgttatggtt ctcacagatg 600
atggtgacat gatttacatt tctgataatg tgaacaaata catgggatta actcagtttg 660
aactaactgg acacagtgtg tttgatttta ctcatccatg tgaccatgag gaaatgagag 720
aaatgettae acacagaaat ggeettgtga aaaagggtaa agaacaaaac acacagegaa 780
gcttttttct cagaatgaag tgtaccctaa ctagccgagg aagaactatg aacataaagt 840
ctgcaacatg gaaggtattg cactgcacag gccacattca cgtatatgat accaacagta 900
accaacetca gtgtgggtat aagaaaceae etatgacetg ettggtgetg atttgtgaae 960
ccatteetca cccatcaaat attgaaatte etttagatag caagaettte etcagtegae 1020
acagcctgga tatgaaattt tcttattgtg atgaaagaat taccgaattg atgggatatg 1080
agccagaaga acttttaggc cgctcaattt atgaatatta tcatgctttg gactctgatc 1140
atctgaccaa aactcatcat gatatgttta ctaaaggaca agtcaccaca ggacagtaca 1200
ggatgcttgc caaaagaggt ggatatgtct gggttgaaac tcaagcaact gtcatatata 1260
acaccaagaa ttctcaacca cagtgcattg tatgtgtgaa ttacgttgtg agtggtatta 1320
```

ttcagcacga cttgattttc tcccttcaac aaacagaatg tgtccttaaa ccggttgaat 1380 cttcagatat gaaaatgact cagctattca ccaaagttga atcagaagat acaagtagcc 1440 tctttgacaa acttaagaag gaacctgatg ctttaacttt gctggcccca gccgctggag 1500

```
acacaatcat atctttagat tttggcagca acgacacaga aactgatgac cagcaacttg 1560
aggaagtacc attatataat gatgtaatgc tcccctcacc caacgaaaaa ttacagaata 1620
taaatttggc aatgtctcca ttacccaccg ctgaaacgcc aaagccactt cgaagtagtg 1680
ctgaccctgc actcaatcaa gaagttgcat taaaattaga accaaatcca gagtcactgg 1740
aactttettt taccatgeee cagatteagg ateagacace tagteettee gatggaagea 1800
ctagacaaag ttcacctgag cctaatagtc ccagtgaata ttgtttttat gtggatagtg 1860
atatggtcaa tgaattcaag ttggaattgg tagaaaaact ttttgctgaa gacacagaag 1920
caaagaaccc attttctact caggacacag atttagactt ggagatgtta gctccctata 1980
teccaatgga tgatgaette eagttaegtt eettegatea gttgteacea ttagaaagea 2040
gttccgcaag ccctgaaagc gcaagtcctc aaagcacagt tacagtattc cagcagactc 2100
aaatacaaga acctactget aatgccacca ctaccactgc caccactgat gaattaaaaa 2160
cagtgacaaa agaccgtatg gaagacatta aaatattgat tgcatctcca tctcctaccc 2220
acatacataa agaaactact agtgccacat catcaccata tagagatact caaagtcgga 2280
cagecteace aaacagagea ggaaaaggag teatagaaca gacagaaaaa teteatecaa 2340
gaagccctaa cgtgttatct gtcgctttga gtcaaagaac tacagttcct gaggaagaac 2400
taaatccaaa gatactagct ttgcagaatg ctcagagaaa gcgaaaaatg gaacatgatg 2460
gttcactttt tcaagcagta ggaattggaa cattattaca gcagccagac gatcatgcag 2520
ctactacatc actttcttgg aaacgtgtaa aaggatgcaa atctagtgaa cagaatggaa 2580
tggagcaaaa gacaattatt ttaataccct ctgatttagc atgtagactg ctggggcaat 2640
caatggatga aagtggatta ccacagctga ccagttatga ttgtgaagtt aatgctccta 2700
tacaaggcag cagaaaccta ctgcagggtg aagaattact cagagctttg gatcaagtta 2760
actgagettt ttettaattt catteetttt tttggacact ggtggeteac tacetaaage 2820
agtctattta tattttctac atctaatttt agaagcctgg ctacaatact gcacaaactt 2880
ggttagttca atttttgatc ccctttctac ttaatttaca ttaatgctct tttttagtat 2940
gttctttaat gctggatcac agacagctca ttttctcagt tttttggtat ttaaaccatt 3000
gcattgcagt agcatcattt taaaaaatgc acctttttat ttatttattt ttggctaggg 3060
agtttatccc tttttcgaat tatttttaag aagatgccaa tataattttt gtaagaaggc 3120
agtaaccttt catcatgatc ataggcagtt gaaaaatttt tacacctttt ttttcacatt 3180
ttacataaat aataatgctt tgccagcagt acgtggtagc cacaattgca caatatattt 3240
tettaaaaaa taccagcagt tactcatgga atatattetg egtttataaa actagttttt 3300
aagaagaaat tttttttggc ctatgaaatt gttaaacctg gaacatgaca ttgttaatca 3360
tataataatg attettaaat getgtatggt ttattattta aatgggtaaa geeatttaca 3420
taatatagaa agatatgcat atatctagaa ggtatgtggc atttatttgg ataaaattct 3480
caattcagag aaatcatctg atgtttctat agtcactttg ccagctcaaa agaaaacaat 3540
accctatgta gttgtggaag tttatgctaa tattgtgtaa ctgatattaa acctaaatgt 3600
tctgcctacc ctgttggtat aaagatattt tgagcagact gtaaacaaga aaaaaaaat 3660
catgcattct tagcaaaatt gcctagtatg ttaatttgct caaaatacaa tgtttgattt 3720
tatgcacttt gtcgctatta acatcctttt tttcatgtag atttcaataa ttgagtaatt 3780
ttagaagcat tattttagga atatatagtt gtcacagtaa atatcttgtt ttttctatgt 3840
acattgtaca aatttttcat teettttget etttgtggtt ggatetaaca etaactgtat 3900
tgttttgtta catcaaataa acatcttctg tggaccagga aaaaaaaaa aaaaaaaa
<210> 3
<211> 3812
<212> DNA
<213> Homo sapiens
<400> 3
gtgctgcctc gtctgagggg acaggaggat caccctcttc gtcgcttcgg ccagtgtgtc 60
gggetgggee etgacaagee acetgaggag aggeteggag eegggeeegg aceeeggega 120
ttgccgcccg cttctctcta gtctcacgag gggtttcccg cctcgcaccc ccacctctgg 180
acttgccttt ccttctctc tccgcgtgtg gagggagcca gcgcttaggc cggagcgagc 240
ctgggggccg cccgccgtga agacatcgcg gggaccgatt caccatggag ggcgccggcg 300
gcgcgaacga caagaaaaag ataagttctg aacgtcgaaa agaaaagtct cgagatgcag 360
ccagateteg gegaagtaaa gaatetgaag ttttttatga gettgeteat cagttgeeac 420
```

ttccacataa tgtgagttcg catcttgata aggcctctgt gatgaggctt accatcagct 480 atttgcgtgt gaggaaactt ctggatgctg gtgatttgga tattgaagat gacatgaaag 540 cacagatgaa ttgcttttat ttgaaagcct tggatggttt tgttatggtt ctcacagatg 600 atggtgacat gatttacatt tctgataatg tgaacaaata catgggatta actcagtttg 660 aactaactgg acacagtgtg tttgatttta ctcatccatg tgaccatgag gaaatgagag 720 aaatgettae acacagaaat ggeettgtga aaaagggtaa agaacaaaac acacagegaa 780 gcttttttct cagaatgaag tgtaccctaa ctagccgagg aagaactatg aacataaagt 840 ctgcaacatg gaaggtattg cactgcacag gccacattca cgtatatgat accaacagta 900 accaacctca gtgtgggtat aagaaaccac ctatgacctg cttggtgctg atttgtgaac 960 ccattcctca cccatcaaat attgaaattc ctttagatag caagactttc ctcagtcgac 1020 acagcctgga tatgaaattt tcttattgtg atgaaagaat taccgaattg atgggatatg 1080 agccagaaga acttttaggc cgctcaattt atgaatatta tcatgctttg gactctgatc 1140 atctgaccaa aactcatcat gatatgttta ctaaaggaca agtcaccaca ggacagtaca 1200 ggatgettge caaaagaggt ggatatgtet gggttgaaac teaagcaact gteatatata 1260 acaccaagaa ttctcaacca cagtgcattg tatgtgtgaa ttacgttgtg agtggtatta 1320 ttcagcacga cttgattttc tcccttcaac aaacagaatg tgtccttaaa ccggttgaat 1380 cttcagatat gaaaatgact cagctattca ccaaagttga atcagaagat acaagtagcc 1440 tetttgacaa acttaagaag gaacetgatg etttaacttt getggeecea geegetggag 1500 acacaatcat atctttagat tttggcagca acgacacaga aactgatgac cagcaacttg 1560 aggaagtacc attatataat gatgtaatgc tcccctcacc caacgaaaaa ttacagaata 1620 taaatttggc aatgtctcca ttacccaccg ctgaaacgcc aaagccactt cgaagtagtg 1680 ctgaccetge acteaateaa gaagttgeat taaaattaga accaaateea gagteaetgg 1740 aactttettt taccatgeee cagatteagg atcagacace tagteettee gatggaagea 1800 ctagacaaag ttcacctgag cctaatagtc ccagtgaata ttgtttttat gtggatagtg 1860 atatggtcaa tgaattcaag ttggaattgg tagaaaaact ttttgctgaa gacacagaag 1920 caaagaaccc attttctact caggacacag atttagactt ggagatgtta gctccctata 1980 tcccaatgga tgatgacttc cagttacgtt ccttcgatca gttgtcacca ttagaaagca 2040 gttccgcaag ccctgaaagc gcaagtcctc aaagcacagt tacagtattc cagcagactc 2100 aaatacaaga acctactgct aatgccacca ctaccactgc caccactgat gaattaaaaa 2160 cagtgacaaa agaccgtatg gaagacatta aaatattgat tgcatctcca tctcctaccc 2220 acatacataa agaaactact agtgccacat catcaccata tagagatact caaagtcgga 2280 cagceteace aaacagagea ggaaaaggag teatagaaca gacagaaaaa teteateeaa 2340 gaagccctaa cgtgttatct gtcgctttga gtcaaagaac tacagttcct gaggaagaac 2400 taaatccaaa gatactagct ttgcagaatg ctcagagaaa gcgaaaaatg gaacatgatg 2460 gttcactttt tcaagcagta ggaattattt agcatgtaga ctgctggggc aatcaatgga 2520 tgaaagtgga ttaccacagc tgaccagtta tgattgtgaa gttaatgctc ctatacaagg 2580 cagcagaaac ctactgcagg gtgaagaatt actcagagct ttggatcaag ttaactgagc 2640 tttttcttaa tttcattcct ttttttggac actggtggct cactacctaa agcagtctat 2700 ttatattttc tacatctaat tttagaagcc tggctacaat actgcacaaa cttggttagt 2760 tcaatttttg atcccctttc tacttaattt acattaatgc tcttttttag tatgttcttt 2820 agtagcatca ttttaaaaaa tgcacctttt tatttattta tttttggcta gggagtttat 2940 ccctttttcg aattatttt aagaagatgc caatataatt tttgtaagaa ggcagtaacc 3000 tttcatcatg atcataggca gttgaaaaat ttttacacct ttttttcac attttacata 3060 aataataatg ctttgccagc agtacgtggt agccacaatt gcacaatata ttttcttaaa 3120 aaataccagc agttactcat ggaatatatt ctgcgtttat aaaactagtt tttaagaaga 3180 aattttttt ggcctatgaa attgttaaac ctggaacatg acattgttaa tcatataata 3240 atgattetta aatgetgtat ggtttattat ttaaatgggt aaageeattt acataatata 3300 gaaagatatg catatatcta gaaggtatgt ggcatttatt tggataaaat tctcaattca 3360 3734AtCAt ctgatgtttc tatagtcact ttgccagctc aaaagaaaac aataccctat 3420 gragtrgrgg aagtttatgc taatattgtg taactgatat taaacctaaa tgttctgcct 3480 accctgttgg tataaagata ttttgagcag actgtaaaca agaaaaaaaa aatcatgcat 3540 tcttagcaaa attgcctagt atgttaattt gctcaaaata caatgtttga ttttatgcac 3600 tttgtcgcta ttaacatcct tttttcatg tagatttcaa taattgagta attttagaag 3660 cattatttta ggaatatata gttgtcacag taaatatctt gttttttcta tgtacattgt 3720

acaaattttt cattcctttt gctctttgtg gttggatcta acactaactg tattgttttg 3780 ttacatcaaa taaacatctt ctgtggacca gg 3812

<210> 4 <211> 3718 <212> DNA <213> Rattus norvegicus

## <400> 4

gacaccgcgg gcaccgattc gccatggagg gcgccggcgg cgagaacgag aagaaaata 60 ggatgagttc cgaacgtcga aaagaaaagt ctagggatgc agcacgatct cggcgaagca 120 aagagtetga agttttttat gagettgete atcagttgee aetteeceae aaegtgaget 180 cccatcttga taaagcttct gttatgaggc tcaccatcag ttacttacgt gtgaggaaac 240 atctgaaagc cctggatggc tttgttatgg tgctaacaga tgatggtgac atgatttaca 360 tttctgataa cgtgaacaaa tacatggggt tgactcagtt tgaactaact ggacacagtg 420 tgtttgattt tacccatcca tgtgaccatg aggaaatgag agaaatgctt acacacagaa 480 atggcccagt gagaaagggg aaagaacaaa acacgcagcg aagcttttt ctcagaatga 540 aatgtaccct aacaagccgg gggaggacga tgaacatcaa gtcagcaacg tggaaggtgc 600 tgcactgcac aggccacatt catgtgtatg ataccagcag taaccagccg cagtgtggct 660 acaagaaacc gcctatgacg tgcttggtgc tgatttgtga acccattcct catccatcaa 720 acattgaaat teetttagae ageaagaeat tteteagteg acaeageete gatatgaaat 780 tttcttactg tgatgaaagg attactgagt tgatgggtta tgagccagaa gaacttttgg 840 gccgttcaat ttatgaatat tatcatgctt tggactctga tcatctgacc aaaactcatc 900 atgacatgtt tactaaagga caagtcacca caggacagta caggatgctt gcaaaaagag 960 gtggatatgt ctgggttgag actcaagcaa ctgttatata taatacgaag aactctcagc 1020 cacagtgcat tgtgtgtgtg aattatgttg taagtggtat tattcagcac gacttgattt 1080 tctcccttca acaaacagaa tctgtcctca aaccagttga atcttcagat atgaaaatga 1140 cccagctgtt cactaaagtg gaatctgagg acacgagctg cctcttcgac aagcttaaga 1200 aagageeega tgeeetgaet etgetagete cageggetgg ggacacgate atateaetgg 1260 actteggeag egatgacaeg gaaactgaag accaacaact tgaagatgte cegttgtaca 1320 atgatgtaat gttcccctct tctaatgaga aattaaatat aaatctggca atgtctccat 1380 tacctgcctc tgaaactcca aagccacttc gaagtagtgc tgatcctgca ctgaatcaag 1440 aggttgcatt gaagttagag tcaagcccag agtcactggg actttcttt accatgcccc 1500 agattcaaga tcagccagca agtccttctg atggaagcac tagacaaagc tcacctgagc 1560 ctaacagtcc cagtgagtac tgctttgatg tggacagcga tatggtcaat gtattcaagt 1620 tggaactggt ggaaaaactg tttgctgaag acacagaagc gaagaatcca ttttcagctc 1680 aggacactga tttagacttg gaaatgctgg ctccctatat cccaatggat gatgatttcc 1740 agttacgttc ctttgatcag ttgtcaccat tagagagcaa ttctccaagc cctccgagtg 1800 tgagcacagt tacaggattc cagcagaccc agttacagaa acctaccatc actgtcactg 1860 ccaccgcaac tgccaccact gatgaatcaa aagcagtgac gaaggacaat atagaagaca 1920 ttaaaatact gattgcatct ccaccttcta cccaagtacc tcaagaaatg accactgcta 1980 aggeateage atacagtggt acteacagte ggacageete accagacaga geaggaaaga 2040 gagtcataga aaaaacagac aaagctcatc caaggagcct taacctatct gtcactttga 2100 atcaaagaaa tactgttcct gaagaagaat taaacccaaa gacaatagct ttgcagaatg 2160 ctcagaggaa gcgaaaaatg gaacatgatg gctccctttt tcaagcagca ggaattggaa 2220 cgttactgca gcaaccaggt gaccgtgccc ctactatgtc gctttcttgg aaacgagtga 2280 aaggatacat atctagtgaa caggatggaa tggagcagaa gacaattttt ttaataccct 2340 ctgatttagc atgtagactg ctggggcagt caatggatga gagtggatta ccacagctga 2400 ccagttacga ttgtgaagtt aatgctccca tacaaggcag cagaaaccta ctgcagggtg 2460 aagaattact cagagetttg gatcaagtta actgagettt tectaatete atteetttga 2520 tttggacact ggtggctcag cagtctattt atattttcta tatctcattt agaggcctgg 2640 ctacagtact gcaccaactc agatagttta gtttgggccc cttcctcctt cattttcact 2700 gatgetettt ttaccatgte ettegaatge cagateacag cacatteaca getececage 2760

- 5 **-**

WO 2004/042024 atttcaccaa tgcattgctg tagtgtcgtt taaaatgcac ctttttattt atttatttt 2820 ggtgagggag tttgtccctt attgaattat ttttaatgaa atgccaatat aattttttaa 2880 gaaggcagta aatcttcatc atgatgatag gcagttgaaa attttttact cattttttc 2940 atgttttaca tgaaaataat gctttgccag cagtacatgg tagccacaat tgcacaatat 3000 attttcttaa aaataccagc agttactcat gcatatattc tgcatttata aaactagttt 3060 ttaagaagaa acttttttg gcctatggaa ttgttaagcc tggatcatga tgctgttgat 3120 cttataatga ttcttaaact gtatggtttc tttatatggg taaagccatt tacatgatat 3180 agagagatat gcttatatct ggaaggtata tggcatttat ttggataaaa ttctcaattg 3240 agaagttatc tggtgtttct ttactttacc ggctcaaaag aaaacagtcc ctatgtagtt 3300 gtggaagett atgetaatat tgtgtaattg atattaaaca ttaaatgtte tgcetateet 3360 gttggtataa agacattttg agcatactgt aaacaaaaaa atcatgcatt gttagtaaaa 3420 ttgcctagta tgttaatttg ttgaaaatac gatgtttggt tttatgcact ttgtcgctat 3480 taacatcctt tttttcatat agatttcaat aattgagtaa ttttagaagc attattttag 3540 aaatatagag ttgtcatagt aaacatcttg tttttttttc ttttttcta tgtacattgt 3600 ataaattttt cattcccttg ctctttgtag ttgggtctaa cactaactgt actgttttgt 3660 tatatcaaat aaacatcttc tgtggaccag gaaaaaaaaa aaaaaaaaa aaaaaaaaa <210> 5 <211> 3973 <212> DNA <213> Mus musculus <400> 5 cgcgaggact gtcctcgccg ccgtcgcggg cagtgtctag ccaggccttg acaagctagc 60 cggaggagcg cctaggaacc cgagccggag ctcagcgagc gcagcctgca cgcccgcctc 120 gegteeeggg ggggteeege eteceaecee geetetggae ttgtetettt eeeegegege 180 gcggacagag ccggcgttta ggcccgagcg agcccggggg ccgccggccg ggaagacaac 240 gegggeaceg attegeeatg gagggegeeg geggegagaa egagaagaaa aagatgagtt 300 ctgaacgtcg aaaagaaaag tctagagatg cagcaagatc tcggcgaagc aaagagtctg 360 aagtttttta tgagettget cateagttge caetteecca caatgtgage teacatettg 420 ataaagcttc tgttatgagg ctcaccatca gttatttacg tgtgagaaaa cttctggatg 480 ccggtggtct agacagtgaa gatgagatga aggcacagat ggactgtttt tatctgaaag 540 ccctagatgg ctttgtgatg gtgctaacag atgacggcga catggtttac atttctgata 600 acgtgaacaa atacatgggg ttaactcagt ttgaactaac tggacacagt gtgtttgatt 660 ttactcatcc atgtgaccat gaggaaatga gagaaatgct tacacacaga aatggcccag 720 tgagaaaagg gaaagaacta aacacacage ggagettttt teteagaatg aagtgeacee 780 taacaageeg ggggaggaeg atgaacatea agteageaae gtggaaggtg etteaetgea 840 cgggccatat tcatgtctat gataccaaca gtaaccaacc tcagtgtggg tacaagaaac 900 cacccatgac gtgcttggtg ctgatttgtg aacccattcc tcatccgtca aatattgaaa 960 ttcctttaga tagcaagaca tttctcagtc gacacagcct cgatatgaaa ttttcttact 1020 gtgatgaaag aattactgag ttgatgggtt atgagccgga agaacttttg ggccgctcaa 1080 tttatgaata ttatcatgct ttggattctg atcatctgac caaaactcac catgatatgt 1140 ttactaaagg acaagtcacc acaggacagt acaggatgct tgccaaaaga ggtggatatg 1200

tetgggttga aactcaagca actgtcatat ataatacgaa gaactcccag ccacagtgca 1260 ttgtgtgtgt gaattatgtt gtaagtggta ttattcagca cgacttgatt ttctcccttc 1320 aacaaacaga atctgtgctc aaaccagttg aatcttcaga tatgaagatg actcagctgt 1380 tcaccaaagt tgaatcagag gatacaagct gcctttttga taagcttaag aaggagcctg 1440 atgeteteae tetgetgget ceagetgeeg gegacaceat catetetetg gattttggca 1500 gcgatgacac agaaactgaa gatcaacaac ttgaagatgt tccattatat aatgatgtaa 1560 tgtttccctc ttctaatgaa aaattaaata taaacctggc aatgtctcct ttaccttcat 1620 cggaaactcc aaagccactt cgaagtagtg ctgatcctgc actgaatcaa gaggttgcat 1680 taaaattaga atcaagtcca gagtcactgg gactttcttt taccatgccc cagattcaag 1740 atcagccagc aagtccttct gatggaagca ctagacaaag ttcacctgag agacttcttc 1800 aggaaaacgt aaacactcct aacttttccc agcctaacag tcccagtgaa tattgctttg 1860 atotogatag cgatatggtc aatgtattca agttggaact ggtggaaaaa ctgtttgctg 1920

```
aagacacaga ggcaaagaat ccattttcaa ctcaggacac tgatttagat ttggagatgc 1980
tggctcccta tatcccaatg gatgatgatt tccagttacg ttcctttgat cagttgtcac 2040
cattagagag caatteteea ageeeteeaa gtatgageae agttactggg ttecageaga 2100
cccagttaca gaaacctacc atcactgcca ctgccaccac aactgccacc actgatgaat 2160
caaaaacaga gacgaaggac aataaagaag atattaaaat actgattgca tctccatctt 2220
ctacccaagt acctcaagaa acgaccactg ctaaggcatc agcatacagt ggcactcaca 2280
gtcggacagc ctcaccagac agagcaggaa agagagtcat agaacagaca gacaaagctc 2340
atccaaggag ccttaagctg tctgccactt tgaatcaaag aaatactgtt cctgaggaag 2400
aattaaaccc aaagacaata gcttcgcaga atgctcagag gaagcgaaaa atggaacatg 2460
atggctccct ttttcaagca gcaggaattg gaacattatt gcagcaacca ggtgactgtg 2520
cacctactat gtcactttcc tggaaacgag tgaaaggatt catatctagt gaacagaatg 2580
gaacggagca aaagactatt attttaatac cctccgattt agcatgcaga ctgctggggc 2640
agtcaatgga tgagagtgga ttaccacagc tgaccagtta cgattgtgaa gttaatgctc 2700
ccatacaagg cagcagaaac ctactgcagg gtgaagaatt actcagagct ttggatcaag 2760
ttaactgagc gtttcctaat ctcattcctt ttgattgtta atgtttttgt tcagttgttg 2820
ttgtttgttg ggtttttgtt tctgttggtt atttttggac actggtggct cagcagtcta 2880
tttatatttt ctatatctaa ttttagaagc ctggctacaa tactgcacaa actcagatag 2940
tttagttttc atcccctttc tacttaattt tcattaatgc tctttttaat atgttctttt 3000
aatgccagat cacagcacat tcacagctcc tcagcatttc accattgcat tgctgtagtg 3060
tcatttaaaa tgcacctttt tatttattta tttttggtga gggagtttgt cccttattga 3120
attattttta atgaaatgcc aatataattt tttaagaaag cagtaaattc tcatcatgat 3180
cataggcagt tgaaaacttt ttactcattt ttttcatgtt ttacatgaaa ataatgcttt 3240
gtcagcagta catggtagcc acaattgcac aatatattt ctttaaaaaa ccagcagtta 3300
ctcatgcaat atattctgca tttataaaac tagtttttaa gaaatttttt ttggcctatg 3360
gaattgttaa gcctggatca tgaagcgttg atcttataat gattcttaaa ctgtatggtt 3420
tctttatatg ggtaaagcca tttacatgat ataaagaaat atgcttatat ctggaaggta 3480
tgtggcattt atttggataa aattctcaat tcagagaagt tatctggtgt ttcttgactt 3540
taccaactca aaacagtccc tctgtagttg tggaagctta tgctaatatt gtgtaattga 3600
ttatgaaaca taaatgttct gcccaccctg ttggtataaa gacattttga gcatactgta 3660
aacaaacaaa caaaaatca tgctttgtta gtaaaattgc ctagtatgtt gatttgttga 3720
aaatatgatg tttggtttta tgcactttgt cgctattaac atccttttt catatagatt 3780
tcaataagtg agtaatttta gaagcattat tttaggaata tagagttgtc atagtaaaca 3840
tcttgttttt tctatgtaca ctgtataaat ttttcgttcc cttgctcttt gtggttgggt 3900
ctaacactaa ctgtactgtt ttgttatatc aaataaacat cttctgtgga ccaggaaaaa 3960
aaaaaaaaa aaa
                                                                  3973
<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence
<220>
<223> target sequence
<400> 6
aactggacac agtgtgtttg a
                                                                  21
<210> 7
<211> 23
<212> RNA
<213> Artificial Sequence
<220>
```

<223> siRNA sense strand

<400> 7 aacuaacugg acacagugug uuu	23
<210> 8 <211> 23	
<212> RNA <213> Artificial Sequence	·
<220> <223> siRNA antisense strand	
<400> 8 acacacugug uccaguuagu uuu	23
<210> 9 <211> 23	
<212> DNA <213> Artificial Sequence	
<220> <223> siRNA sense strand	
<400> 9 aacuaacugg acacagugug utt	23
<210> 10 <211> 23	
<212> DNA <213> Artificial Sequence	
<220>	
<223> siRNA antisense strand <400> 10	
acacacugug uccaguuagu utt	23
<210> 11 <211> 21	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<400> 11 aactaactgg acacagtgtg t	
<210> 12	21
<211> 17 <212> DNA	
<213> Artificial Sequence	
<220> <223> target sequence	

<400> 12	
cgacaagaaa aagataa	17
	Τ,
<210> 13	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 13	
aaagataagt totgaac	
adagacaage ceegaae	17
<210> 14	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
.000	
<220>	
<223> target sequence	
<400> 14	
agataagttc tgaacgt	17
<210> 15	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 15	
gttctgaacg tcgaaaa	17
	1,
<210> 16	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
and the sequence	
<400> 16	
	•
aagaaaagtc tcgagat	17
40105-17	
<210> 17	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220> <223> target sequence	

WO 2004/042024

- 9 -

<400> 17 gaaaagtctc gagatgc	17
<210> 18	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 18	
agtctcgaga tgcagcc	17
.070 10	
<210> 19 <211> 17	
<211> 17 <212> DNA	
<212> DNA <213> Artificial Sequence	
(213) Artificial Sequence	
<220>	
<223> target sequence	
<400> 19	
gtaaagaatc tgaagtt	17
	1,
<210> 20.	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
4220.	
<220>	
<223> target sequence	
<400> 20	
gaatctgaag tttttta	
	17
<210> 21	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 21	
gttttttatg agcttgc	17
<210> 22	
<210> 22 11 17	
· YOMA	
<pre></pre> <pre></pre> <pre></pre> <pre>Artificial Sequence</pre>	
Wrettrergt pedneuce	
<220>	
<223> target sequence	

WO 2004/042024	PCT/US2003/034826
<400> 22	
ggcctctgtg atgaggc	17
	Δ,
<210> 23	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 23	
cttctggatg ctggtga	17
210 04	
<210> 24 <211> 17	
<211> 17 <212> DNA	
<213> Artificial Sequence	
rate imparatorur poduence	
<220>	
<223> target sequence	
<400> 24	
agcacagatg aattgct	17
<210> 25	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
4	
<220>	
<223> target sequence	
4400- 25	
<400> 25 aaatgcttac acacagaaat g	
adatgettae acacagadat g	21
<210> 26	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
-220	
<220>	
<223> target sequence	
<400> 26	
gaaaaagata agttctg	17
· •	17
<210> 27	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target seguence	

<400> 27 aagataagtt ctgaacg	17
<210> 28 <211> 17 <212> DNA	
<213> Artificial Sequence	
<220> <223> target sequence	
<400> 28 gataagttct gaacgtc	17
<210> 29	
<211> 17 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 29	
cgtcgaaaag aaaagtc	17
<210> 30	
<211> 17 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 30	
agaaaagtet egagatg	17
<210> 31	
<211> 17	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<400> 31	17
aagtctcgag atgcagc	17
<210> 32	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

WO 2004/042024

PCT/US2003/034826

WO 2004/042024	PCT/US2003/034826
<400> 32	• •
gtctcgagat gcagcca	17
	<b>4</b> ,
<210> 33	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 33	
agaatctgaa gtttttt	
	17
<210> 34	•
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 34	
tctgaagttt tttatga	17
<210> 35	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
4400. 25	
<400> 35	
tgtgagttcg catcttg	17
<210> 36	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 36	
acttctggat gctggtg	17
<210> 37	
<211> 17	
<211> 17 <212> DNA	
<213> Artificial Sequence	
seducuce	
<220>	
<223> target sequence	

WO 2004/042024	PC1/US2003/034820
<400> 37	
gatgacatga aagcaca	17
<210> 38	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
5	
<400> 38	
gcacagatga attgctt	17
•••	
<210> 39 <211> 21	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 39	
aagtttttta tgagettget e	21
<210> 40	
<210> 40 <211> 21	
<212> DNA	
<213> Artificial Sequence	•
<220>	
<223> target sequence	
400	
<400> 40	
aagttttta tgagcttgct c	21
<210> 41	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
<400> 41	
aaggcctctg tgatgaggct t	
auggeococg cgacgagger c	21
<210> 42	
<211> 21 .	
<212> DNA	
<213> Artificial Sequence	
<b></b>	
<220>	
<223> target sequence	

WO 2004/042024	PCT/US2003/034826
<400> 42	
aaacttctgg atgctggtga t	0.7
33 3 35 3	21
<210> 43	
<211> 21	
<212> DNA	
<213> Artificial Sequence	•
bodacuse	
<220>	
<223> target sequence	
<400> 43	
aacttctgga tgctggtgat t	
	21
<210> 44	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
bequeite	
<220>	
<223> target sequence	
<400> 44	
aagatgacat gaaagcacag a	
5 Swall January a	21
<210> 45	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
3	
<400> 45	
aaagcacaga tgaattgctt t	27
	21
<210> 46	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<u>.</u>	
<220>	
<223> target sequence	
<b>3</b>	
<400> 46	
aagcacagat gaattgcttt t	0.7
	21
<210> 47	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
J	

<400> 47 aattgctttt atttgaaagc c	21
121.0	
<210> 48 <211> 21	
<211> 21 <212> DNA	
<213> Artificial Sequence	
varas wrettrerar peddelice	
<220>	
<223> target sequence	
<400> 48	
aaagccttgg atggttttgt t	21
<210> 49	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
1225 carget sequence	
<400> 49	
aagccttgga tggttttgtt a	2.7
	21
<210> 50	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	τ
<223> target sequence	
<400> 50	
aatgtgaaca aatacatggg a	
and goganou accepting a	21
<210> 51	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
.400. 77	
<400> 51	
aacaaataca tgggattaac t	21
<210> 52	•
<pre><?11 21</pre></pre>	
- TO - DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 52 aaatacatgg gattaactca g	21
<210> 53	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
400	
<400> 53	
aaatacatgg gattaactca g	21
<210> 54	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
<400> 54	
aactcagttt gaactaactg g	21
<210> 55	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<u>-</u>	
<220>	
<223> target sequence	
<400> 55	
aactaactgg acacagtgtg t	
anoundergy acacagogog c	21
<210> 56	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 56	
aactggacac agtgtgtttg a	21
<210> 57	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<del>-</del>	
<220>	
<223> target seguence	

<400> 57 aaatgagaga aatgcttaca c	21
<210> 58	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<u>-</u>	
<220>	
<223> target sequence	
<400> 58	
aatgagagaa atgcttacac a	21
<210> 59	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 59	
aaatgcttac acacagaaat g	21
<210> 60	
<211> 21 <212> DNA	
<212> DNA <213> Artificial Sequence	
value Architetar Sequence	
<220>	
<223> target sequence	
<400> 60	
aatgcttaca cacagaaatg g	21
<210> 61	
<211> 21 <212> DNA	
<213> Artificial Sequence	
(213) Attiticial Sequence	
<220>	
<223> target sequence	
<400> 61	
aaatggcctt gtgaaaaagg g	21
	a
<210> 62	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target semience	

<400> 62 aatggccttg tgaaaaaggg t	21
<210> 63	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 63	
aaaaagggta aagaacaaaa c	21
<210> 64	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 64	
aaaagggtaa agaacaaaac a	21
<210> 65	
<211> 21	
<212> DNA <213> Artificial Sequence	
(213) Artificial Bequence	
<220>	
<223> target sequence	
<400> 65	
aaagggtaaa gaacaaaaca c	21
<210> 66	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
.400 .66	
<400> 66	
aagggtaaag aacaaaacac a	21
<210> 67	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

WO 2004/042024

PCT/US2003/034826

W O 2004/042024	1 € 17 €52003/034620
<400> 67	
aaagaacaaa acacacagcg a	0.1
addyddodd dodddydg u	21
<210> 68	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
·	
<220>	
<223> target sequence	
.100	
<400> 68	
aagaacaaaa cacacagcga a	21
	<del></del>
<210> 69	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
1225 carget sequence	
<400> 69	
aacaaaacac acagcgaagc t	21
	21
<210> 70	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	·
1220 target sequence	
<400> 70	
aacaaaacac acagcgaagc t	21
	21
<210> 71	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<del>-</del>	
<220>	
<223> target sequence	
<400> 71	
aaacacacag cgaagctttt t	2.1
J - J	21
-210- 72	
<210> 72	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
orraciat pedacuce	
<220>	
<223> target sequence	
-	

<400> 72 aacacage gaagettttt t	21
<210> 73	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 73	
aagcttttt ctcagaatga a	21
<210> 74	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
400 7.	
<400> 74	
aatgaagtgt accctaacta g	21
<210> 75	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 75	
aagtgtaccc taactagccg a	
anguguases taactageeg a	21
<210> 76	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 76	
aactagccga ggaagaacta t	
	21
<210> 77	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target seguence	

WO 2004/042024	PCT/US2003/034826
<400> 77	
aagaactatg aacataaagt c	21
- 5	21
<210> 78	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	•
<223> target sequence	
<400> 78	
aactatgaac ataaagtctg c	.21
	.21
<210> 79	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 79	
aacataaagt ctgcaacatg g	21
<210> 80	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
des carges bequence	
<400> 80	
aaagtetgea acatggaagg t	
. Jee-Jea dodoggadgg t	21
<210> 81	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
4	
<220>	
<223> target sequence	
•	
<400> 81	
aagtctgcaa catggaaggt a	21
	21
<210> 82	
-211- 21	
FNG COL	
(213> Artificial Sequence	•
<220>	
<223> target sequence	

WO 2004/042024	PCT/US2003/034826
<400> 82	
aacatggaag gtattgcact g	27
55 ··· 5 · 5 · · · · · 5 · · · · · · ·	21
<210> 83	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
and important peducince	·
<220>	
<223> target sequence	
1220 carget sequence	
<400> 83	
aaggtattgc actgcacagg c	
adggeatege acegeacagg c	21
<210> 84	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
:000	
<220>	
<223> target sequence	
<400> 84	
aacagtaacc aacctcagtg t	21
•••	
<210> 85	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 85	
aaccaacctc agtgtgggta t	21
	21
<210> 86	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
•	
<400> 86	
aacctcagtg tgggtataag a	
5 · 5 · 5 5 5 5	21
<210> 87	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
wrettrerar sequence	
<220>	
<223> target sequence	
NALIZ Larger sequence	

<400> 87 aagaaaccac ctatgacctg c	21
<210> 88	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
.400	
<400> 88	
aagaaaccac ctatgacctg c	21
<210> 89	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
<400> 89	
aaccacctat gacctgcttg g	21
<210> 90	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 90	
aacccattcc tcacccatca a	21
<210> 91	
<211>, 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
<400> 91	
aaatattgaa attootttag a	21
<210> 92	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 92 aatattgaaa ttcctttaga t	21
<210> 93 <211> 21	
<212> DNA <213> Artificial Sequence	
<220>	
<223> target sequence	
<pre>'&lt;400&gt; 93 aaattccttt agatagcaag a</pre>	21
<210> 94	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 94	
aatteettta gatageaaga e	21
<210> 95	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 95	
aagactttcc tcagtcgaca c	21
<210> 96	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 96	
aaattttctt attgtgatga a	21
<210> 97	
<211> 21	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<223> target sequence	

<400> 97 aattttctta ttgtgatgaa a	21
<210> 98	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 98	
aaagaattac cgaattgatg g	0.7
adagaactac cgaactgatg g	21
<210> 99	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 99	
aattaccgaa ttgatgggat a	21
	<b>21</b>
<210> 100	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
1220 Gargee Bedachee	
<400> 100	
aattaccgaa ttgatgggat a	21
<210> 101	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
3	
<400> 101	
aagaactttt aggccgctca a	21
<210> 102	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 102 aacttttagg ccgctcaatt t 21 <210> 103 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 103 aatttatgaa tattatcatg c 21 <210> 104 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 104 aatattatca tgctttggac t 21 <210> 105 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 105 aaaactcatc atgatatgtt t 21 <210> 106 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 106 aaactcatca tgatatgttt a 21 <210> 107 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 107 aactcatcat gatatgttta c	21
<210> 108	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 108	
aaaggacaag tcaccacagg a	21
<210> 109	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
Taran in order ord	
<220>	
<223> target sequence	
<400> 109	
aaggacaagt caccacagga c	21
	21
<210> 110	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 110	
aagtcaccac aggacagtac a	21
<210> 111	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 111	
aaaagaggtg gatatgtctg g	21
-210. 112	
<210> 112	
<211> 21	
<213> Artificial Sequence	
7273% WIGHTIGHAT BENNEHER	
<220>	
<223> target sequence	

<400> 112 aaagaggtgg atatgtctgg g	21
<210> 113	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
· •	
<220>	
<223> target sequence	
<400> 113	
aagaggtgga tatgtctggg t	21
<210> 114	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
1225 barger bedreame	
<400> 114	
aaactcaagc aactgtcata t	21
<210> 115	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 115	
aactcaagca actgtcatat a	21
aacccaagca accgccacac a	21
<210> 116	
<211> 21	•
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 116	
aagcaactgt catatataac a	21
<210> 117	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<220> <223> target sequence	

<400> 117 aactgtcata tataacacca a	21
<210> 118 <211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 118	
aacaccaaga attctcaacc a	21
<210> 119	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 119	
aagaattete aaccacagtg c	
auguation auccaeageg c	21
<210> 120	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<b>-</b>	
<220>	
<223> target sequence	•
<400> 120	
aatteteaae cacagtgeat t	21
<210> 121	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
12237 Carget Sequence	
<400> 121	
aaccacagtg cattgtatgt g	0.7
	21
<210> 122	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	

<400> 122 aattacgttg tgagtggtat t	21
	21
<210> 123	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
taas sarges sequence	
<400> 123	
aacaaacaga atgtgtcctt a	21
<210> 124	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 124	
aaacagaatg tgtccttaaa c	21
.210- 125	
<210> 125 <211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
400 - 205	
<400> 125 aacagaatgt gtccttaaac c	
aacagaatgt gtccttaaac c	21
<210> 126	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 126	
atgtgtcctt aaaccggttg	20
	20
<210> 127	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
.000	
<220>	
SAAJZ LOUGEL SHOWERCH	

<400> 127 aaaccggttg aatcttcaga t	21
<210> 128	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 128	
aaccggttga atcttcagat a	21
<210> 129	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
.220.	
<220> <223> target sequence	
22237 target sequence	
<400> 129	
aatcttcaga tatgaaaatg a	21
<210> 130	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 130	
aaaatgactc agctattcac c	21
.010. 101	
<210> 131 <211> 21	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 131	
aaatgactca gctattcacc a	21
<210> 132	
<211> 21 <211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	

WO 2004/042024

PCT/US2003/034826

<400> 132 aatgactcag ctattcacca a 21 <210> 133 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 133 aaagttgaat cagaagatac a 21 <210> 134 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 134 aagttgaatc agaagataca a 21 <210> 135 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 135 aatcagaaga tacaagtagc c 21 <210> 136 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 136 aagatacaag tagcctcttt g 21 <210> 137 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 137	
aagtagcctc tttgacaaac t	21
	24
<210> 138	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
(223) carget sequence	
<400> 138	
aaacttaaga aggaacctga t	
	21
<210> 139	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 139	
aacttaagaa ggaacctgat g	
and the second of the second o	21
<210> 140	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 140	
aagaaggaac ctgatgcttt a	
maganagana dagadgada a	21
<210> 141	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 141	
aaggaacctg atgctttaac t	21
<210> 142	
<211> 21	
12> DNA	
213, Artificial Sequence	
•	
<220>	
<223> target seguence	

WO 2004/042024	PCT/US2003/034826
<400> 142	
aacctgatgc tttaactttg c	21
<210> 143	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 143	
aactttgctg gccccagccg c	21
<210> 144	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 144	
aatcatatct ttagattttg g	21
	21
<210> 145	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
1220 Sarger Bedramoe	
<400> 145	
aacgacacag aaactgatga c	21
<210> 146	
<211> 21 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 146	
aaactgatga ccagcaactt g	21
<210> 147	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<2235 target seguence	

<400> 147 aactgatgac cagcaacttg a	21
<210> 148	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
.000	
<220>	
<223> target sequence	
<400> 148	
aacttgagga agtaccatta t	21
<210> 149	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 149	
aagtaccatt atataatgat g	21
-210- 150	
<210> 150 <211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
<400> 150	
aatgatgtaa tgctcccctc a	21
	21
<210> 151	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
and and and action	
<400> 151	
aatgctcccc tcacccaacg a	21
<210> 152	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 152	
aacgaaaaat tacagaatat a	21
and garden and a second a	21
(210) 152	
<210> 153	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
<400> 153	
aaaaattaca gaatataaat t	21
_	
<210> 154	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
and the second s	
100 100	
<400> 154	
aaaattacag aatataaatt t	21
<210> 155	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 155	
aaattacaga atataaattt g	~ -
additionage attacasation g	21
<210> 156	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
1220	
<220>	
<223> target sequence	
<400> 156	
aattacagaa tataaatttg g	21
	~ I
2210. 157	
<210> 157	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
• • • • • • • • • • • • • • • • • • • •	
-220	
<220>	
<223> target sequence	

<400> 157 aatataaatt tggcaatgtc t	21
<210> 158	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
and the state of t	
<220>	
<223> target sequence	
<400> 158	
aaatttggca atgtctccat t	21
	41
<210> 159	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<u>-</u>	
<220>	
<223> target sequence	
<400> 159	
aatttggcaa tgtctccatt a	21
<210> 160	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 160	
	0.1
aatgteteea ttaeeeaceg e	21
<210> 161	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
The state of the s	
<220>	
<223> target sequence	
<400> 161	
aaacgccaaa gccacttcga a	21
- · · · · ·	<b></b>
<210> 162	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<del>-</del>	
<220>	
2222 target gemienge	

WO 2004/042024	PCT/US2003/034826
<400> 162	
aacgccaaag ccacttcgaa g	21
	21
<210> 163	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
.400. 153	
<400> 163	
aaagccactt cgaagtagtg c	21
<210> 164	•
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 164	
aagccacttc gaagtagtgc t	21
<210> 165	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
rarage pedactice	
<400> 165	
aagtagtgct gaccctgcac t	21
	21
<210> 166	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
-400- 1CC	
<400> 166	
aatcaagaag ttgcattaaa a	21
<210> 167	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 167 aagaagttgc attaaaatta g	21
<210> 168	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
4400, 260	
<400> 168	
aagttgcatt aaaattagaa c	21
<210> 169	
<211> 21	•
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 169	
aaaattagaa ccaaatccag a	21
adda oo adda coolag a	21
<210> 170	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
and the sequence	
<400> 170	
aaattagaac caaatccaga g	21
<210> 171	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
•	
<400> 171	
aattagaacc aaatccagag t	21
<210> 172	
· 211 > 21	
<pre>312 - DIA &lt;213 &gt; Artificial Sequence</pre>	
/prox wretiteral pedinence	
<220>	
<223> target sequence	

<400> 172 aaccaaatcc agagtcactg g 21 <210> 173 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 173 aaatccagag tcactggaac t 21 <210> 174 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 174 aatccagagt cactggaact t 21 <210> 175 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 175 aactttcttt taccatgccc c 21 <210> 176 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 176 aagcactaga caaagttcac c 21 <210> 177 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 177 aaagttcacc tgagcctaat a 21 <210> 178 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 178 aagttcacct gagcctaata g 21 <210> 179 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 179 aatagtccca gtgaatattg t 21 <210> 180 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 180 aatattgttt ttatgtggat a 21 <210> 181 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 181 aatgaattca agttggaatt g 21 <210> 182 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

WO 2004/042024	PCT/US2003/034826
<400> 182	
aattcaagtt ggaattggta g	21
3 33 33 3	21
<210> 183	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 183	
aagttggaat tggtagaaaa a	21
,	21
<210> 184	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
<400> 184	
aattggtaga aaaacttttt g	21
	2
<210> 185	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 185	
aaaacttttt gctgaagaca c	21
<210> 186	
<211> 21	·
<212> DNA	
<213> Artificial Sequence	
4220	
<220>	
<223> target sequence	
<400> 186	
aaacttttg ctgaagacac a	21
<210> 187	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
rectriciat pedreuce	
<220>	
<223> target sequence	

WO 2004/042024	PCT/US2003/034826
<400> 187	
aactttttgc tgaagacaca g	21
	21
<210> 188	•
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 188	
aagacacaga agcaaagaac c	0.7
5 · · · · · · · · · · · · · · · · · · ·	21
<210> 189	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 189	
aagcaaagaa cccattttct a	27
5 5 5 m = 1 0 m = 1 0 m	21
<210> 190	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
4	
<220>	
<223> target sequence	
•	
<400> 190	
aaagaaccca ttttctactc a	21
	21
<210> 191	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<del>-</del>	
<220>	
<223> target sequence	
<400> 191	
aagaacccat tttctactca g	21
-	21
<210> 192	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
• • • •	
<220>	
<223> target seguence	

<400> 192 aacccatttt ctactcagga c	21
<210> 193	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
- · ·	
<400> 193	
aatggatgat gacttccagt t	21
•	
<210> 194	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 194	
aaagcagttc cgcaagccct g	21
-07.0- 1.05	
<210> 195 <211> 21	
<211> 21 <212> DNA	
<213> Artificial Sequence	
(213) Alcilicial Sequence	
<220>	
<223> target sequence	
3	
<400> 195	
aagcagttcc gcaagccctg a	21
<210> 196	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 196	
aagccctgaa agcgcaagtc c	21
<210> 197	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
2223 target gominge	

<400> 197 aaagcgcaag tcctcaaagc a	21
<210> 198	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
1220	
<220> <223> target sequence	
(223) target sequence	
<400> 198	
aagcgcaagt cctcaaagca c	21
<210> 199	
<211> 21 <212> DNA	
<213> Artificial Sequence	
various arciticati bequence	
<220>	
<223> target sequence	
<400> 199	
aagtcctcaa agcacagtta c	21
<210> 200	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 200	
aaagcacagt tacagtattc c	21
<210> 201	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
.000	
<220> <223> target sequence	
(223) target sequence	
<400> 201	
aagcacagtt acagtattcc a	21
	•
<210> 202	
-2112 21 - 1115 DMA	
<213> Artificial Sequence	
rate in the sequence	
<220>	
<223> target sequence	

<400> 202 aaatacaaga acctactgct a 21 <210> 203 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 203 aatacaagaa cctactgcta a 21 <210> 204 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 204 aagaacctac tgctaatgcc a 21 <210> 205 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 205 aacctactgc taatgccacc a 21 <210> 206 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 206 aatgccacca ctaccactgc c 21 <210> 207 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 207 aattaaaaac agtgacaaaa g	21
<210> 208	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 208	
aaaaacagtg acaaaagacc g	21
<210> 209	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 209	
aaaacagtga caaaagaccg t	21
.010	
<210> 210 <211> 21	
<212> DNA	
<213> Artificial Sequence	
The state of the s	
<220>	
<223> target sequence	
<400> 210	
aaacagtgac aaaagaccgt a	21
-070. 071	
<210> 211 <211> 21	
<212> DNA	
<213> Artificial Sequence	
in our requence	
<220>	
<223> target sequence	
•	
<400> 211	
aacagtgaca aaagaccgta t	21
<210> 212	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 212 aaaagaccgt atggaagaca t	21
<210> 213 <211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 213	
aaagaccgta tggaagacat t	21
<210> 214	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 214	
aagaccgtat ggaagacatt a	21
<210> 215	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 215	
aagacattaa aatattgatt g	21
<210> 216	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 216	
aaaatattga ttgcatctcc a	21
<210> 217	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 217 aaatattgat tgcatctcca t	21
<210> 218 <211> 21	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<400> 218 aatattgatt gcatctccat c	21
<210> 219 <211> 21	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<400> 219 aaagaaacta ctagtgccac a	21
<210> 220 <211> 21	
<212> DNA <213> Artificial Sequence	
<220> <223> target sequence	
<400> 220 aagaaactac tagtgccaca t	21
<210> 221	
<211> 21 <212> DNA <213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 221 aaactactag tgccacatca t	21
<210> 222 <211> 21	
<212> DNA <213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 222 aactactagt gccacatcat c	21
<210> 223	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 223	
aaagtcggac agcctcacca a	21
	21
<210> 224	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 224	
aagtcggaca gcctcaccaa a	21
1010. 005	
<210> 225	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
vanos carace pedaence	
<400> 225	
aaacagagca ggaaaaggag t	
· · · · · · · · · · · · · · · · · · ·	21
<210> 226	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
<400> 226	
aacagagcag gaaaaggagt c	21
	بقد ضد
<210> 227	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 227 aaaaggagtc atagaacaga c 21 <210> 228 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 228 aaaggagtca tagaacagac a 21 <210> 229 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 229 aaggagtcat agaacagaca g 21 <210> 230 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 230 aacagacaga aaaatctcat c 21 <210> 231 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 231 aaaaatctca tccaagaagc c 21 <210> 232 -211> 21 LLL DIA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

	WO 2004/042024	PCT/US2003/03482
	<400> 232	
-	aaaatctcat ccaagaagcc c	21
	<210> 233	
	<211> 21	
	<211> 21 <212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> target sequence	
	<400> 233	
	aaatctcatc caagaagccc t	21
	<210> 234	
	<211> 21	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> target sequence	
	<400> 234	
	aateteatee aagaageeet a	21
	<210> 235	
	<211> 21	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> target sequence	
	<400> 235	
	aagaagccct aacgtgttat c	21
	<210> 236	•
	<211> 21	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> target sequence	
	<400> 236	
	aagccctaac gtgttatctg t	. 21
	<210> 237	
	<211> 21	
	<212> DNA	
	<213> Artificial Sequence	
	<220>	
	<223> target sequence	
	and a seductive	

<400> 237 aacgtgttat ctgtcgcttt g 21 <210> 238 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 238 aaagaactac agttcctgag g 21 <210> 239 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 239 aagaactaca gttcctgagg a 21 <210> 240 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 240 aactacagtt cctgaggaag a 21 <210> 241 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 241 aagaactaaa tccaaagata c 21 <210> 242 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 242 aactaaatcc aaagatacta g	21
<210> 243	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
.400 040	
<400> 243	
aaatccaaag atactagctt t	21
<210> 244	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 244	
aatccaaaga tactagcttt g	21
-010 045	
<210> 245	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 245	
aaagatacta gctttgcaga a	21
<210> 246	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 246	•
aagatactag ctttgcagaa t	
	21
<210> 247	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 247	
aatgctcaga gaaagcgaaa a	21 .
	21
<210> 248	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	•
<223> target sequence	
<400> 248	
aaagcgaaaa atggaacatg a	
anagogaaaa acggaacacg a	21
<210> 249	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
1210) WIGHTIGH Reducing	
<220>	
<223> target sequence	
12237 Carget sequence	
<400> 249	
aagcgaaaaa tggaacatga t	21
<210> 250	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
de la contractat peducuce	
<220>	
<223> target sequence	
<400> 250	
aaaaatggaa catgatggtt c	
	21
<210> 251	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
12237 Carget Bequence	
<400> 251	
aaaatggaac atgatggttc a	
	21
<210> 252	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
verso wrettierat sedneuce	
<220>	
<223> target sequence	
>440/ carget sequence	

<400> 252 aaatggaaca tgatggttca c	21
<210> 253	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
and Architecture beducines	
<220>	
<223> target sequence	
<400> 253	
aatggaacat gatggttcac t	21
<210> 254	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
.000	
<220>	
<223> target sequence	
<400> 254	
aacatgatgg ttcacttttt c	21
	2.1
<210> 255	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 255	
	0.7
aagcagtagg aattggaaca t	21
<210> 256	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 256	
aattggaaca ttattacagc a	21
.010. 055	
<210> 257	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target semience	

<400> 257	
aacattatta cagcagccag a	
and the substitution of th	21
<210> 258	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 258	
aaacgtgtaa aaggatgcaa a	
- managasana adagacagana a	21
<210> 259	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 259	
aacgtgtaaa aggatgcaaa t	
· · · · · · · · · · · · · · · · · · ·	21
<210> 260	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 260	
aaaaggatgc aaatctagtg a	21
	21
<210> 261	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
2232 Artificial Sequence	
-220.	
<220>	
<223> target sequence	
<400> 261	
aaaggatgca aatctagtga a	21
	41
<210> 262	
-2115 21	
2125 DNA	
<pre>&lt;213&gt; Artificial Sequence</pre>	
<220>	
<2235 target seguence	

WO 2004/042024	PCT/US2003/034826
<400> 262	
aaggatgcaa atctagtgaa c	27
	21
<210> 263	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 263	
aaatctagtg aacagaatgg a	21
<210> 264	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
4220.	
<220>	
<223> target sequence	
<400> 264	
·	
aatctagtga acagaatgga a	21
<210> 265	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
in orractar pedaence	
<220>	
<223> target sequence	
•	
<400> 265	
aacagaatgg aatggagcaa a	21
	21
<210> 266	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
<400> 266	
aatggaatgg agcaaaagac a	21
1210 055	
<210> 267	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220.	
<220> <223> target sequence	
N4432 Larget sequence	

<400> 267 aatggagcaa aagacaatta t 21 <210> 268 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 268 aaaagacaat tattttaata c 21 <210> 269 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 269 aaagacaatt attttaatac c 21 <210> 270 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 270 aagacaatta ttttaatacc c 21 <210> 271 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 271 aattatttta ataccctctg a 21 <210> 272 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

<400> 272 aataccctct gatttagcat g	21
<210> 273	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
(223) target sequence	
<400> 273	
aatcaatgga tgaaagtgga t	21
	21
<210> 274	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
4400. 074	
<400> 274	
aatggatgaa agtggattac c	21
<210> 275	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
-	
<220>	
<223> target sequence	
.400. OFF	
<400> 275	
aaagtggatt accacagctg a	21
<210> 276	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
•	
<220>	
<223> target sequence	
<400> 276	,
aagtggatta ccacagctga c	21
-010. 000	·
<210> 277	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<del>-</del>	

<400> 277 catcagttgc cacttccaca t 21 <210> 278 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 278 cttggatggt tttgttatgg t 21 <210> 279 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 279 atgggattaa ctcagtttga a 21 <210> 280 <211> 21 <212> DNA <213> Artificial Sequence <223> target sequence <400> 280 gtctgcaaca tggaaggtat t 21 <210> 281 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence <400> 281 cattcctcac ccatcaaata t 21 <210> 282 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> target sequence

PCT/US2003/034826

WO 2004/042024	PCT/US2003/034826
<400> 282 aggccgctca atttatgaat a ;	21
<210> 283	
<211> 21	
<212> DNA <213> Artificial Sequence	
12137 Alcilicial Sequence	
<220>	
<223> target sequence	
<400> 283	
tcatatataa caccaagaat t	21
<210> 284	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 284	
tgtccttaaa ccggttgaat c	21
<210> 285	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 285	
agectetttg acaaacttaa g	21
<210> 286	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 286	
atgaccagca acttgaggaa g	21
<210> 287	
<211> 21	
-010. DND	

<212> DNA

<220>

<213> Artificial Sequence

<223> target sequence

WO 2004/042024	PCT/US2003/034826
<400> 287	
cattacccac cgctgaaacg c	21
<210> 288	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 288	
agattcagga tcagacacct a	21
<210> 289	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 289	
atagtgatat ggtcaatgaa t	21
<210> 290	
<211> 21	
<212> DNA	
<213> Artificial Sequence	•
<220>	
<223> target sequence	
<400> 290	
acacagattt agacttggag a	21
<210> 291	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 291	

21

cacagttaca gtattccagc a

<213> Artificial Sequence

<223> target sequence

<210> 292 <211> 21 >==== 5%A

<220>

## WO 2004/042024

## PCT/US2003/034826

<400> 292 attgattgca tctccatctc c	21
<210> 293	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
varoz metriciar bequence	
<220>	
<223> target sequence	
and a contract of a contract o	
<400> 293	
atactagett tgcagaatge t	21
3	21
<210> 294	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 294	
attattacag cagccagacg a	21
<210> 295	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
and any sales bedactice	
<400> 295	
acaattattt taataccctc t	21
	21
<210> 296	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	
<400> 296	
accagttatg attgtgaagt t	21
<210> 297	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> target sequence	

<400> 297 aactaactgg acacagtgtg t	21
<210> 298	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
·	
<220>	
<223> siRNA sense strand	
<400> 298	
cuaacuggac acagugugut t	21
<210> 299	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> siRNA antisense strand	
<400> 299	
acacacugug uccaguuagt t	21

WO 2004/042024

PCT/US2003/034826